

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A desulfurization method, comprising:
removing sulfur content from a liquid hydrocarbon with a metallic desulfurizing agent, ~~wherein said method employs~~ under desulfurization conditions satisfying the following formula (1):

$$1.06 \times P_{\text{ope}}^{0.44} < T_{\text{ope}}/T_{50} < 1.78 \times P_{\text{ope}}^{0.22} \quad (1)$$

wherein:

T_{ope} represents operation temperature in °C;

P_{ope} represents operation pressure in MPa; and

T_{50} represents a temperature per 50 percent recovered as determined by the "test method for distillation at atmospheric pressure" stipulated as provided in the standard JIS K2254 "Petroleum products – Determination of distillation characteristics" as revised in 1998;

hydrogen addition is not employed while removing sulfur content; and
the metallic desulfurizing agent comprises a porous inorganic oxide and a metallic element comprising at least nickel (Ni) supported on the porous inorganic oxide.

Claim 2 (Previously Presented): The desulfurization method according to Claim 1, wherein the desulfurization conditions satisfy the following formula (2):

$$1.19 \times P_{\text{ope}}^{0.35} < T_{\text{ope}}/T_{50} < 1.68 \times P_{\text{ope}}^{0.24} \dots (2).$$

Claims 3-4 (Cancelled)

Claim 5 (Currently Amended): The desulfurization method according to ~~Claim~~ 4Claim 1, wherein the metallic desulfurizing agent is a nickel-copper-based desulfurizing agent.

Claim 6 (Currently Amended): The desulfurization method according to Claim 1, wherein the liquid hydrocarbon ~~is one species~~ comprises at least one member selected from the group consisting of a gasoline fraction, a kerosene fraction, and a gas oil fraction.

Claim 7 (Previously Presented): A method for producing hydrogen, said method comprising reforming a liquid hydrocarbon which has been desulfurized through said desulfurization method as recited in Claim 1 to produce said hydrogen.

Claim 8 (Previously Presented): The method for producing hydrogen according to Claim 7, wherein the reforming is partial-oxidation reforming, autothermal reforming, or steam reforming.

Claim 9 (Previously Presented): The method for producing hydrogen according to Claim 8, wherein said partial-oxidation reforming, said autothermal reforming, or said steam reforming is performed in the presence of a reforming catalyst comprising ruthenium or nickel.

Claim 10 (Previously Presented): The method for producing hydrogen for a fuel cell according to Claim 9, wherein the reforming catalyst comprises manganese oxide, cerium oxide, or zirconium oxide.

Claim 11 (Cancelled)

Claim 12 (New): A method for producing a desulfurized liquid hydrocarbon,
comprising:

identifying distillation characteristics of a liquid hydrocarbon;

selecting desulfurization conditions based on the distillation characteristics of the
liquid hydrocarbon; and

contacting the liquid hydrocarbon with a metallic desulfurizing agent under the
desulfurization conditions to obtain the desulfurized liquid hydrocarbon;

wherein:

selecting the desulfurization conditions comprises selecting conditions satisfying the
following formula (1):

$$1.06 \times P_{\text{ope}}^{0.44} < T_{\text{ope}}/T_{50} < 1.78 \times P_{\text{ope}}^{0.22} \quad (1)$$

wherein

T_{ope} represents operation temperature in °C;

P_{ope} represents operation pressure in MPa; and

T_{50} represents a temperature per 50 percent recovered as determined by the
"test method for distillation at atmospheric pressure" provided in the standard JIS K2254
"Petroleum products – Determination of distillation characteristics" as revised in 1998.